

DEPARTMENT of ENVIRONMENTAL SERVICES
Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: CONTOOCCOOK LAKE	Lake Area (ha):	153.78
Town: JAFFREY	Maximum depth (m):	6.4
County: Cheshire	Mean depth (m):	2.2
River Basin: Merrimack	Volume (m ³):	1944000
Latitude: 42°47'15" N	Relative depth:	0.6
Longitude: 72°00'45" W	Shore configuration:	3.54
Elevation (ft): 1009	Areal water load (m/yr):	15.19
Shore length (m): 11700	Flushing rate (yr ⁻¹):	6.80
Watershed area (ha): 2382.8	P retention coeff.:	0.50
% watershed ponded: 8.4	Lake type:	natural w/dam

BIOLOGICAL:

	18 January 1989	29 August 1988
DOM. PHYTOPLANKTON (% TOTAL) #1	ASTERIONELLA 98%	DINOBRYON 30%
#2		MALLOMONAS 30%
#3		CHRYOSOPHAERELLA 20%
PHYTOPLANKTON ABUNDANCE (cells/mL)		580.0
CHLOROPHYLL-A (µg/L)		4.73
DOM. ZOOPLANKTON (% TOTAL) #1	KERATELLA 57%	KELLICOTTIA 51%
#2	CALANOID COPEPOD 27%	
#3		
ROTIFERS/LITER	47	119
MICROCRUSTACEA/LITER	22	36
ZOOPLANKTON ABUNDANCE (#/L)	70	155
VASCULAR PLANT ABUNDANCE		Common
SECCHI DISK TRANSPARENCY (m)		2.8
BOTTOM DISSOLVED OXYGEN (mg/L)	12.2	7.5
BACTERIA (fecal col., #/100 ml) #1		< 1
#2		4
#3		

SUMMER THERMAL STRATIFICATION:

not stratified

Depth of thermocline (m): None
Hypolimnion volume (m³): None

CHEMICAL:Lake: CONTOOCCOOK LAKE
Town: JAFFREY

	18 January 1989		29 August 1988		
DEPTH (m)	2.0	4.0	1.0		4.0
pH (units)	6.0	5.9	6.3		6.3
A.N.C. (Alkalinity)	2.8	2.8	3.8		3.8
NITRATE NITROGEN	0.09	0.08	< 0.05		< 0.05
TOTAL KJELDAHL NITROGEN	0.60	0.56	0.68		0.55
TOTAL PHOSPHORUS	0.018	0.014	0.001		0.005
CONDUCTIVITY (μ mhos/cm)			55.5		55.4
APPARENT COLOR (cpu)	32	37	27		28
MAGNESIUM			0.53		
CALCIUM			2.1		
SODIUM			6.2		
POTASSIUM			0.70		
CHLORIDE	9	10	9		9
SULFATE	6	6	5		5
TN : TP	38	46	680		110
CALCITE SATURATION INDEX			4.1		

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1988

D.O. S.D. PLANT CHL TOTAL CLASS

**	3	3	1	7	Meso.
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COMMENTS:

1. Contoocook Lake was previously surveyed and classified in 1977. It was marginally oligotrophic at that time (one more point would have made it mesotrophic). The major change was in water clarity, from 13 feet to 9 feet (water clarity can easily vary that much during one season). In other words, despite the change in classification, there was no significant change in water quality.
2. Cryptomonas (25%), Chroomonas (15%), and tiny green flagellates (15%) were the dominant genera of whole-water phytoplankton. Cryptomonads (40%) and greens (30%) were the dominant classes.
3. Good launch site was present in the lower channel of the lake.

CONTOOCOOK LAKE

JAFFERY



Rough Bathymetric Chart
WSPCD - 1988
sounded by fathometer
10 ft. isobaths

launch



10

20

10

0

.5

km

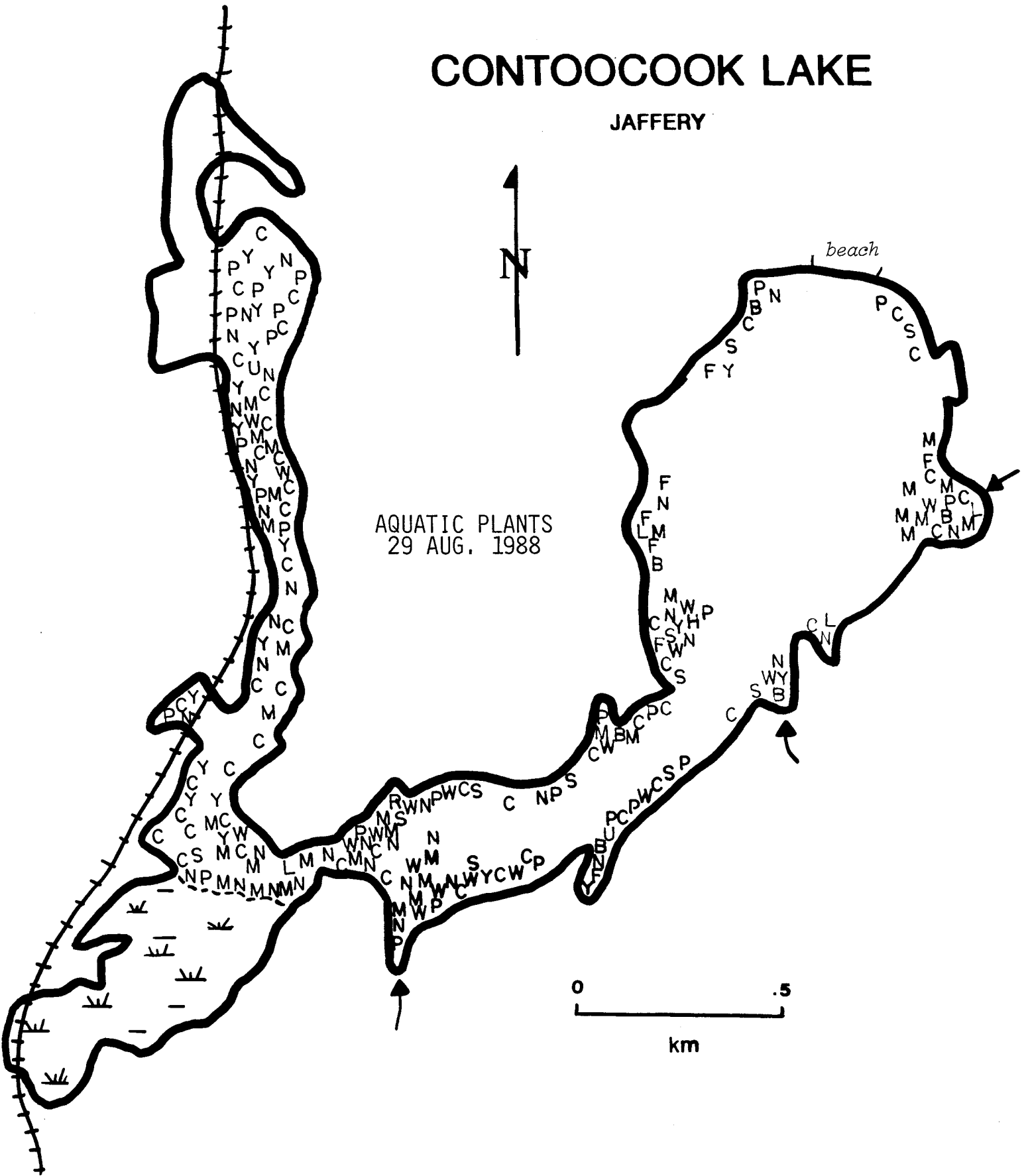
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CONTOOCOOK LAKE

JAFFERY



AQUATIC PLANTS
29 AUG. 1988



AQUATIC PLANT SURVEY			
LAKE: CONTOOCOOK LAKE		TOWN: JAFFREY	DATE: 08/29/88
Key	PLANT NAME		ABUNDANCE
	GENERIC	COMMON	
M	Myriophyllum heterophyllum	Water milfoil	Common
H	Myriophyllum humile	Water milfoil	Sparse
Y	Nuphar	Yellow water lily	Common
N	Nymphaea	White water lily	Common
P	Pontederia cordata	Pickerselweed	Common
B	Brasenia schreberi	Water shield	Sparse
C	Carex	Sedge	Common
S	Sparganium	Bur reed	Sparse
F	Nymphoides cordatum	Floating heart	Sparse
G	Gratiola	Hedge hyssop	Sparse
L	Lobelia dortmanna	Water lobelia	Sparse
b	Scirpus	Bulrush	Sparse
U	Utricularia	Bladderwort	Sparse
W	Potamogeton	Pondweed	Scattered
OVERALL ABUNDANCE: Common			
<u>GENERAL OBSERVATIONS:</u> 1. The overall abundance was the same as in 1977: common in the lake proper and very abundant in the lower area (a natural wetland area). The major adverse change was the appearance of milfoil (<u>Myriophyllum heterophyllum</u>), a non-native plant in New Hampshire.			